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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

Appellants: Z. TOTH

Application No.: 10/700,448

Filing Date: November 5, 2003

Title: MODULAR/CONFIGURABLE DIE FOR A ROTARY DIE CUTTER

Art Unit: 3724

Examiner: Charles GOODMAN

Conf. No.: 6374

**APPEAL BRIEF**

Mail Stop: Appeal Brief - Patents  
Commissioner of Patents  
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Alexandria VA 22313-1450

July 3, 2007

Sir:

**I. Real Party in Interest**

The real party in interest in this appeal and application is the applicant, Mr. Zsolt Toth.

**II. Related Appeals and Interferences**

There are no related appeals or interferences.

**III. Status of the Claims**

Claims 1, 4-6, 8-15, 20, 21, 24-27 and 29 are in the application. Claims 2, 3, 7, 16-19, 22, 23, 28 and 30-39 have been cancelled. This appeal is with respect to all of the claims in the application.

#### **IV. Status of the Amendments**

An Amendment Under 37 C.F.R. §1.116 was filed concurrently with this Appeal Brief to amend claim 1 to place it in better form for appeal. There has been no other amendment filed after the final rejection of October 11, 2006. The appealed claims in the Appendix contain the amendment to claim 1 by the Amendment Under 37 C.F.R. §1.116 filed herewith.

#### **V. Summary of Claimed Subject Matter**

The present invention is an improved rotary die for a rotary die cutter for making from a stock sheet of corrugated material a corrugated carton blank from which a carton having at least one quick closing continuous closure panel can be erected. The invention is also a rotary die cutter which includes the improved rotary die cutter on the outer circumferential surface of a rotary die roller to form a rotary press with a rotary die anvil roller.

The corrugated carton and the carton blank to erect the carton made with the rotary die and rotary die cutter of the invention can be in accordance with Appellant's U.S. Patent No. 6,487,682. Referring to the application drawings, a corrugated carton or box 1, referred to as a QuickBox in the application specification, with two quick closing continuous closure panels 19, at the top and bottom of the carton, is shown in Figs. 2B and 17B. Each of the continuous closure panels comprises two fold-in panels 41 and two top/bottom panels 40. All the panels that close each of the top and bottom of the carton can be folded into place at the same time by simply pressing on any one of the panels. The carton blank 2 with quick closing continuous closure panels 19, for erecting the carton 1, made using the rotary die and rotary die

cutter of the invention is shown in Figs. 2A and 17A. Different types of cartons having at least one quick closing continuous closure panel disclosed in the application include the carton 15 in Figs. 6B and 8B wherein the carton has a regular slotted container bottom with flaps separated by slots 20, and a quick closing continuous closure panel at the top. The carton is erected from the blank 14 shown in Figs. 6A and 8A. Another type of carton having at least one quick closing continuous closure panel is the telescope half box 24 of Fig. 10B, which is produced from the carton blank 25 of Fig. 10A.

An important feature of the rotary die of the invention is that it is modular/configurable in a way which provides unique flexibility and significant cost savings in producing corrugated carton blanks for different sizes and/or types of cartons as compared with conventional rotary dies and rotary die cutters for the corrugated carton industry which use a dedicated die for each specific type/size of carton blank that must be mounted on the roller of the rotary die cutter and cannot be adjusted to produce varying sized carton blanks and/or varying types of carton blanks.

The modular/configurable rotary die of the present invention is comprised of individual die components that are mounted directly on the roller of a standard rotary die cutter. There are three dimensions to a carton. The modular/configurable rotary die utilizes three basic modular die component types related to these dimensions to produce carton blanks: length die component, height die component and width die component. Utilizing varying sizes of selected ones of these die components produces varying sizes of carton blanks. Utilizing varying types of width die components which are related to the closure panels of the carton in accordance with the invention produces varying types of carton blanks.

The individual modular die components of the rotary die of the invention are interlocked with respect to one another by, for example, using pins on one of adjacent die components and sockets or holes for receiving the pins on the other of the adjacent components as noted on page 13, lines 8-13, of the specification. This permits the die components to be pre-assembled on a curved assembly surface 29 at a work station 28, as shown in Fig. 18A, and then transported with a brace 31 with quick couplings 32 from the work station to the roller of the rotary die cutter as shown in Figs. 18C and 18D and described on page 26, line 9 - page 28, line 19 of the specification. Alternatively, the modular die components can be assembled in interlocking relation with one another in any position on the roller of the rotary die cutter and the assembled die then positioned on the roller and secured to the roller by mounting the die utilizing die mounting clamps as described on page 25, the last four lines on page 28, line 3.

The modular/configurable rotary die of the example embodiments described in the specification are based on one of two different die models:

- a Rule-Model Approach, described on page 10, line 16 - page 11, line 12, and

- a Panel-Model Approach, described on page 11, line 13 - page 12, line 11.

The Rule-Model Approach of the embodiment of Figs. 1, 2A and 2B and the embodiment of Figs. 3, 4A and 4B, provides good flexibility on length/height and employs inexpensive components although there are 12 die components to install.

The Panel-Model Approach of the embodiment of Figs. 3, 4A and 4B, the embodiment of Figs. 7, 8A and 8B, and the embodiment of Figs. 9, 10A and 10B has the advantage that the rotary die has fewer die components, 7, 7 and 5, die components, respectively, for the referenced embodiments, and is easier to install

than the Rule-Model Approach. The length/height components are inexpensive but there is limited flexibility.

With either the Rule-Model Approach or the Panel-Model Approach, a change in only a small number of the die components of the modular/configurable rotary die enables changing the carton type or size. In Examples R1 and R2 described on pages 13 and 14 of the specification, a change from using four QuickBox closure panel die components in Example R1 to using two Quickbox closure panel die components in the rotary die and two flap die components changes the carton type from that in Fig. 2B to that in Fig. 6B. Likewise, changing the length of the die components responsible for size, e.g., height or length, die components, changes the carton size, e.g., note the height of the carton is 18 inches in Example R4 on page 17 but selected to be 12 inches in Example R1 on page 13.

Appealed independent claims 1 and 26 are set forth below with the addition of specific references within parentheses to the specification by page and line number, and the drawings by reference number to further explain the claimed subject matter with respect to an embodiment of the invention.

1. A modular/configurable rotary die for a rotary die cutter (4 in Fig. 1) for making a corrugated carton blank (2 in Fig. 2A), from which a carton (1 in Fig. 2B and Fig. 17B) having at least one quick closing continuous closure panel (19 in Figs. 2B and 17B) can be erected, from a stock sheet of corrugated material, the rotary die comprising:

a plurality of at least five interlocking modular die components (four score rule die components 6, for crease rule die components 7, and four QuickBox closure panel die components 8 in Figs. 1, 2A and 2B) which are capable of being combined in multiple configurations for producing multiple carton sizes, said die components being mountable directly on a roller (3 in Fig. 2A) of a rotary die cutter (4 in Fig. 1)

where the die components are interlocked (page 13, lines 7-14) with one another, each die component having at least one blade thereon for at least one of scoring, creasing and cutting (page 13, line 6 - page 14, line 6) a corrugated sheet to cooperatively form a corrugated carton blank (2) in a rotary die cutter (4) from a stock sheet (13) of corrugated material,

wherein said plurality of die components include, with reference to the three dimensions of the carton to be erected from the corrugated carton blank, at least one length die component which determines the length of the carton, at least one height die component which determines the height of the carton, and at least two closure panel die components (19 in Figs. 2B and 17B) which determine the width of the carton (page 13, lines 17-18) and produce respective fold-in panels (41 of Fig. 17B) of said at least one quick closing continuous closure panel (page 13, line 6 - page 14, line 6),

wherein each of said closure panel die components includes:

two slit/cut blades (45 in Fig. 1, page 23, lines 9-11) each arranged for slitting a 45 degree angled line on a fold-in panel of a quick closing continuous closure panel,

two perforation blades (46 in Figs. 2A, page 23, lines 12-15) each arranged to cut and score the corrugated stock sheet to form a perforated straight line that is perpendicular to the length of the carton blank, and

one scoring blade (47 in Fig. 2A, page 23, lines 16-19) arranged to score a straight line at the bottom of the fold-in panel, parallel to the length of the carton blank and between the two perforated lines formed by said two perforation blades.

26. A rotary die cutter (4 in Figs. 1 and 2A) for making a corrugated carton blank (2 in Fig. 2A), from which a carton (1 in Fig. 2B and Fig. 17B) having at least one quick closing continuous closure panel (19 in Figs. 2B and 17B) can be erected, from a stock sheet (13 in Fig. 2A) of corrugated material, comprising:

    a rotary die anvil roller (5 in Figs. 1 and 2A);

    a rotary die roller (3 in Figs. 1 and 2A);

    a rotary die (12 die components 6, 7 and 8 in Figs. 1 and 2A as

described on page 13, lines 7 - page 14, line 6) mounted on the outer circumferential surface of the rotary die roller (3) to form a rotary press with said rotary die anvil roller (5) for producing a corrugated carton blank (2) from a stock sheet (13) of corrugated material fed between the rotary die and the anvil roller;

    wherein the rotary die is formed with a plurality of at least five interlocking modular die components (four score rule die components 6 four crease rule die components 7, and four QuickBox closure panel die components in Figs. 1, 2A and 2B) which are capable of being combined in multiple configurations for producing multiple carton sizes, said die components being mounted directly on said rotary die roller (3 in Figs. 2A) and interlocked (page 13, lines 7-14) with one another, each die component having at least one blade thereon for at least one of scoring, creasing and cutting (page 13, line 6 - page 14, line 6) a corrugated sheet fed between the rotary die and the anvil roller to cooperatively form a corrugated carton blank (2) from a stock sheet (13) of corrugated material,

    wherein said plurality of die components include, with reference to the three dimensions of a carton to be erected from a corrugated carton blank, at least one length die component which determines the length of the carton, at least one

height die component which determines the height of the carton, and at least two closure panel die components (19 in Figs. 2B and 17B) which determine the width of the carton (page 13, lines 17-18) and produce respective fold-in panels (41 in Fig. 17B) of said at least one quick closing continuous closure panel ( page 13, line 6 - page 14, line 6),

wherein each of said closure panel die components includes:

two slit/cut blades (45 in Fig. 1, page 23, lines 9-11) each arranged for slitting a 45 degree angled line on a fold-in panel of a quick closing continuous closure panel,

two perforation blades (46 in Fig. 2A, page 23, lines 12-15) each arranged to cut and score the corrugated stock sheet to form a perforated straight line that is perpendicular to the length of the carton blank, and

one scoring blade (47 in Fig. 2A, page 23, lines 16-19) arranged to score a straight line at the bottom of the fold-in panel, parallel to the length of the carton blank and between the two perforated lines formed by said two perforation blades.

## **VI. Ground of Rejection**

The claims on appeal, claims 1, 4-6, 8-15, 20, 21, 24-27 and 29 are finally rejected in the Office Action of October 11, 2006 under 35 U.S.C. §103(a) as being unpatentable over Quinlan U.S. Patent No. 4,020,724, in view of Simpson et al., U.S. Patent No. 5,429,577, and Koelsch, U.S. Patent No. 5,875,699. The references are combined for the reasons and in the manner set forth on pages 2-4 of the Office Action of October 11, 2006.

## **VII. Argument**

It is stated in the final rejection of the appealed claims that the primary reference to Quinlan discloses Appellant's claimed invention substantially as claimed except that Quinlan does not explicitly set forth that the die components determine the dimensions of a carton nor the specific blade arrangement thereof, nor that the

die components are interlocked with each other. The secondary reference to Simpson et al. was relied upon as teaching a die component that includes all the dimensions of the product to be made and the use of slit/cut blades and perforation blades, including ones angled at 45° which define the carton and fold shape thereof.

The secondary reference to Koelsch was cited for its teaching of a cutting die mounting system in which die components 30A and 30B are registered with respect to each other on drum 24 using guide assemblies 90, Figures 1 and 2 and column 6, lines 6-65. It was concluded in the final rejection that it would have been obvious, 35 U.S.C. §103, in view of the combined teachings of Quinlan and Simpson to provide the invention of Quinlan with an arrangement of cutting/scoring components that determine the dimensions and folds of the end product, and from Koelsch to provide the modified device of Quinlan with the guide assemblies, referred to as the interlock in a rejection, to insure proper engagement of the die components with respect to each other. Implicit in the conclusion in the final rejection is the assertion that the so modified Quinlan rotary cutting die would meet the limitations of Appellant's appealed claims. Appellant takes issue with the propriety of the final rejection. It is respectfully submitted that the proposed modifications of Quinlan would not have been obvious under 35 U.S.C. §103 and, even if made, that the resulting rotary cutting die does not meet the limitations of the appealed claims.

Each of Appellant's independent claims 1 and 26 recite that the modular/configurable rotary die (claim 1) and the rotary die cutter (claim 26) has a rotary die comprising a plurality of at least five interlocking modular die components which are capable of being combined in multiple configurations for producing multiple carton sizes, the die components being mountable/mounted directly on a roller of the rotary die cutter where the die components are interlocked with one

another, each die component having at least one blade thereon for at least one of scoring, creasing and cutting a corrugated sheet to cooperatively form a corrugated carton blank in the rotary die cutter from a stock sheet of corrugated material. The plurality of die components is further defined as including, with reference to the three dimensions of the carton to be erected from the corrugated carton blank, at least one length die component which determines the length of the carton, at least one height die component which determines the height of the carton, and at least two closure panel die components which determine the width of the carton and produce respective fold-in panels of at least one quick closing continuous closure panel of the carton. Each of the closure die components includes two slit/cut blades each arranged for slitting a 45° angled line on a fold-in panel of a quick closing continuous closure panel, two perforation blades each arranged to cut and score the corrugated stock sheet to form a perforated straight line that is perpendicular to the length of the carton blank, and one scoring blade arranged to score a straight line at the bottom of the fold-in panel, parallel to the length of the carton blank and between the two perforated lines by the two perforation blades.

None of the cited references disclose a rotary die for making from a stock sheet of corrugated material a corrugated carton blank from which a carton having at least one quick closing continuous closure panel can be erected as disclosed and claimed by Appellant. Further, none of the cited references disclose a modular/configurable rotary die comprising a plurality of at least five interlocking modular die components which are capable of being combined in multiple configurations for producing multiple carton sizes as disclosed and claimed by Appellant. The use of the specific modular die components in relation to the specific dimensions of the carton and the at least one quick closing continuous closure panel

of the carton enable the substitution of, for example, only the modular die components that determine the height of the carton in the rotary die for making a corrugated carton blank for a carton having a different height as discussed in the application specification and in the summary of the claimed subject matter above. The present invention is thus modular in a different and advantageous way as compared to the rotary cutting die of Quinlan.

The rotary cutting die of Quinlan uses a plurality of dies 10, 10', 11, 11', to cut a planar object. Quinlan's die components are for flap cutting an already cut carton blank and not for producing an entire carton blank from stock sheet as in Appellant's invention. The aspect of modularity for this purpose as disclosed and claimed by Appellant is also lacking in Quinlan. The dies in Quinlan each carry knife means 22 thereon and are each independently and adjustably mounted on a die drum 12. Because they are not interlocked with one another, when placed on the die drum each die must be longitudinally and circumferentially positioned relative to the drum such that their knife edges will cut the desired flaps, column 9, lines 19-32. The die components of Quinlan are not interlocking with each other as in the present invention. The configurability of the rotary die of Quinlan is attained through use of plural, separate die boards, each independently connected to the die drum and each having knife means adjustably positioned thereon. This is different, and teaches away from Appellant's rotary die where at least five interlocking modular die components are interlockable with each other such that they can be preassembled, apart from the die roller or in any position on the die roller and then the assembled die moved on the roller to position it on the die roller where it is secured by mounting as discussed in the "Assembling a Die" on pages 26 and 27 of the application specification and as referred to in the summary of claimed subject matter above.

Appellant's claimed rotary die utilizes a different approach than in Quinlan, which facilitates the use of the rotary die in multiple configurations for producing multiple carton sizes and types.

The deficiencies of Quinlan are not remedied by the secondary references to Simpson et al. and Koelsch. Simpson et al. discloses a multi-purpose rotary slit-score and products formed thereby. The rotary slit-scorer uses a conventional dedicated die that cannot be adjusted to produce varying sizes of carton blanks and/or varying types of carton blanks as with the rotary die of Appellant's invention. To produce a different size/type carton blank according to Simpson et al., the first die must be removed and another dedicated die must be mounted. The die rule members 29 in Simpson et al. are conventionally mounted within slots of die board 26, see column 4, lines 58-63. The die board 26 is in turn mounted the roll 12 of the rotary die apparatus 10, Figure 1 of Simpson et al. In contrast, Appellant's individual die components which are related to the three dimensions of the carton to be erected and the at least one quick closing continuous closure panel for the carton, are interlockable with each other and mounted directly on the roller of the rotary die cutter.

The patent to Koelsch is directed to a cutting die mounting system. In pertinent part, Koelsch discloses a cutting or scoring machine 22 including an upper die cutting cylinder or drum 24 and a contra-rotating anvil 26. The cutting die cylinder or drum 24 includes one or two steel rule cutting die assemblies. In Figure 2, a first steel rule cutting die assembly 30A and a second steel rule cutting die assembly 30B are illustrated. These die assemblies each include a plurality of serrated steel cutting rules 32 which are arranged on the face of and secured within the cutting dies assemblies in a pattern corresponding to the cutting, scoring or

slitting desired on the sheet stock 20. Koelsch states at column 3, line 66 to column 4, line 9 that whether there is a single cutting assembly 30A or a first cutting die assembly 30A and a second cutting die assembly 30B, they must be securely attached to the drum 24 for a production run and then removed. "Typically, one or two cutting die assemblies will be unique to a product and thus a particular production facility will have a significant number of cutting die assemblies which will be frequently or less frequently mounted upon the drum 24, used for production run, removed and then replaced by the cutting die assemblies for a different product and subsequent production run." This refers to the use of dedicated dies as discussed in Appellant's specification and as referred to above. The present invention avoids the cost and inefficiency of maintaining such dedicated dies for each various size and type of carton through the use of the improved rotary die of the invention wherein the die is formed of a plurality of at least five interlocking modular die components capable of being combined in multiple configurations for producing multiple carton sizes, the plurality of die components being related to the three dimensions of the carton as well as the at least one quick closing continuous closure panel as recited in Appellant's claims for facilitating the use of the die in multiple configurations for producing multiple carton sizes. These features and advantages are not taught or suggested by Koelsch.

Koelsch is relied upon for its disclosure of the use of guide assemblies 30A and 30B wherein complimentary shaped surfaces 96 on guide plates 92 on the respective guide assemblies 30A and 30B register the die assemblies with respect to one another on the drum 24 as explained in column 6, lines 6-28. Appellant respectfully submits that the cooperating curved surfaces 96 on the guide assemblies 90 in Koelsch merely serve to "align" e.g. to bring into a straight line, to

bring into agreement or close cooperation as defined in Webster's New Collegiate Dictionary, and not to "interlock", e.g. defined by Webster's as to lock together, joined with one another, which occurs when Appellant's die components are interlocked with respect to one another by, for example, using pins on one adjacent die component and sockets or holes for receiving the pins on the other adjacent die component as in Appellant's example embodiment described in the application specification. The advantage of "interlocking" as defined by Webster's New Collegiate Dictionary, rather than aligning the die assemblies as in Koelsch is that die components can be pre-assembled on a curved surface separate from the rotary die cutter and then transported to the rotary die roller in their assembled position and mounted on the rotary die roller, or alternatively the die components can be assembled in any position on the rotary die roller such that the die component are interlocked with each other and then the entire assembly shifted on the rotary die roller to a desired position where the die components of the assembly are then mounted in position as described in Appellant's specification and as referred to above. This difference is significant in affording the flexibility of the configuration of the rotary die for producing different carton sizes and different carton types. In view of these basic differences between Koelsch and the present invention, it is respectfully submitted that the proposed combination of Koelsch and Quinlan and Simpson does not obvious, 35 U.S.C. §103, Appellant's claims.

While the above comments have been made particularly with respect to appealed independent claims 1 and 26, it is respectfully submitted that the dependent claims are separately patentable over the cited references from the independent claims for the reasons set forth below.

Dependent claims 11, 15 and 29 each recite that the closure panel die

components further include a curved cut blade that cuts away the outline of a hideaway handle on a fold-in panel of a quick closing closure panel formed on the corrugated carton blank. As explained on pages 28 and 29 of the specification, the continuous closure panel 19 is one continuous piece. Therefore, it cannot be folded backward to act as a handle for the opened carton as would be the case for a carton with flaps in a regular slotted container. The hideaway handle 11 of the invention addresses the need to pick up and move an open carton made with the modular/configurable rotary die and rotary die cutter of the invention. The hideaway handle is cut into the QuickBox continuous closure panel by means of the provision of a curved cut blade that cuts the outline of a hideaway handle on a fold-in panel of a quick closing closure panel formed on the corrugated blank as recited in appeal claims 11, 15 and 29. The applied references to Quinlan, Simpson and Koelsch do disclose or suggest this feature of Appellant's claimed invention or render it obvious under 35 U.S.C. §103.

Dependent claims 9 and 13 each recite that the plurality of die components of the rotary die further include four score die components that determine the length of a carton to be erected from the corrugated carton blank, and four crease die components that determine the height of the carton. These claims are specific to the Rule-Model Approach embodiment of the invention described on pages 13 and 14 of the specification and see examples R1 and R2 shown in Figures 1, 2A and 2B and Figures 5, 6A and 6B wherein 12 die components form the rotary die. The rotary die of the invention according to the Rule-Model Approach as recited in dependent claims 9 and 13 provides good flexibility on length/height and employs inexpensive components as noted in the specification. The claimed rotary die of dependent claims 9 and 13 employing this Rule-Model Approach further define over

the applied references, under 35 U.S.C. §103.

Dependent claims 10, 14 and 21 each recite that the plurality of die components of the rotary die further include two score/crease panel die components that determine the height and the length of the carton to be erected from the corrugated carton blank, and one crease die component that determines the height of the carton. These are features specific to the Panel-Model Approach embodiment of the invention referred to on pages 11 and 12 of the specification. Example embodiments of the invention according to the Panel-Model Approach include the embodiment of Figures 3, 4A and 4B, the embodiment of Figures 7, 8A and 8B and the embodiment of Figures 9, 10A and 10B. A rotary die of the invention according to the Panel-Model Approach has fewer parts and is easier to install than the Rule-Model Approach. The length/height components are inexpensive but there is limited flexibility as discussed in the application specification, page 18, the last two lines to page 19, the first two lines. The applied references do not suggest or render obvious this specific claimed solution to the problem of avoiding the use of dedicated dies for making from a stock sheet of corrugated material a corrugated carton blank from which a carton having at least one quick closing continuous closure panel can be erected as recited in the appealed claims. The claims further patentably define over the references under 35 U.S.C. §103.

Dependent claim 24 is also separately patentably from the independent claims. The claim recites that the plurality of die components are pre-assembled in interlocking relation with one another on a brace for positioning the pre-assembled die components on a roller of a rotary die cutter. In Appellant's example embodiment, the brace 31 with quick couplings 32 is used to position the pre-assembled die of the interlocked die components, previously assembled and

interlocked on a curved assembly surface 29, as described on pages 26-28 of the specification and shown in Figures 18A-18F. The cited references do not disclose or suggest the additional features of dependent claim 24. The primary reference to Quinlan teaches away from pre-assembly, instead relying upon the use of independent die components displaceable with respect to each other on the die drum for positioning as noted in column 9, lines 23-28.

In summary, the final rejection of the claims contains glaring omissions with respect to the aforementioned limitations in the appealed claims. There is only the broad statement at the end of the rejection that the prior art teachings make obvious arranging the rule on the die component to make the intended panel. No reasons for arriving at the missing features of the claimed invention not found in the references or in the proposed modification of the references to arrive at Appellant's claimed invention are provided in the rejection. Appellant's claims are believed to clearly patentably define over the cited references in that they are not obvious, 35 U.S.C. §103, over the disparate teachings of the three cited references. Accordingly, reconsideration and reversal of the final rejection of the appealed claims is respectfully requested.

### **VIII. Claim Appendix**

Attached.

### **IX. Evidence Appendix**

None.

## **IX. Related Proceeding Appendix**

None.

Please charge any shortage of fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, No. 01-2135, and please credit any excess fees to said deposit account.

Respectfully submitted,  
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**Claims Appendix:**

**Listing of the Claims 1, 4-6, 8-15, 20, 21, 24-27 and 29 Pending On Appeal**

1. (previously presented) A modular/configurable rotary die for a rotary die cutter for making a corrugated carton blank, from which a carton having at least one quick closing continuous closure panel can be erected, from a stock sheet of corrugated material, the rotary die comprising:

a plurality of at least five interlocking modular die components which are capable of being combined in multiple configurations for producing multiple carton sizes, said die components being mountable directly on a roller of a rotary die cutter where the die components are interlocked with one another, each die component having at least one blade thereon for at least one of scoring, creasing and cutting a corrugated sheet to cooperatively form a corrugated carton blank in a rotary die cutter from a stock sheet of corrugated material,

wherein said plurality of die components include, with reference to the three dimensions of the carton to be erected from the corrugated carton blank, at least one length die component which determines the length of the carton, at least one height die component which determines the height of the carton, and at least two closure panel die components which determine the width of the carton and produce respective fold-in panels of said at least one quick closing continuous closure panel,

wherein each of said closure panel die components includes:

two slit/cut blades each arranged for slitting a 45 degree angled line on a fold-in panel of a quick closing continuous closure panel,

two perforation blades each arranged to cut and score the corrugated stock sheet to form a perforated straight line that is perpendicular to the length of the carton blank, and

one scoring blade arranged to score a straight line at the bottom of the fold-in panel, parallel to the length of the carton blank and between the two perforated lines formed by said two perforation blades.

2. (canceled)

3. (canceled)

4. (previously presented) The rotary die according to claim 1, further comprising a plurality of die mounting clamps for mounting the die components directly on a roller of a rotary die cutter.

5. (previously presented) The rotary die according to claim 4, wherein said die mounting clamps include means for adjustably positioning the clamps relative to threaded attachment holes in a roller of a rotary die cutter on which the die components are mounted.

6. (original) The rotary die according to claim 4, wherein said plurality of die components include components having slots on their outer surfaces for receiving said die mounting clamps therein when the die components are mounted on a roller of a rotary die cutter.

7. (canceled)

8. (previously presented) The rotary die according to claim 1, wherein said plurality of die components include four of said closure panel die components which determine the width of the carton and cooperate to form a corrugated carton blank having two quick closing continuous closure panels that run parallel to each other end-to-end along the length of the carton blank on respective sides of the carton blank.

9. (previously presented) The rotary die according to claim 8, wherein said plurality of die components further include:

- (a) four score die components that determine the length of a carton to be erected from the corrugated carton blank; and
- (b) four crease die components that determine the height of the carton.

10. (previously presented) The rotary die according to claim 8, wherein said plurality of die components further include:

- (a) two score/crease panel die components that determine the height and the length of a carton to be erected from the corrugated carton blank; and
- (b) one crease die component that determines the height of the carton.

11. (previously presented) The rotary die according to claim 8, wherein each of said closure panel die components further includes a curved cut blade that cuts the outline of a hide away handle on a fold-in panel of a quick closing closure panel formed on the corrugated carton blank.

12. (previously presented) The rotary die according to claim 1, wherein said plurality of die components cooperate to form a corrugated carton blank having one quick closing continuous closure panel that runs along the length of the carton blank on one side thereof and on an opposite side has a plurality of flaps with cut slots separating the flaps.

13. (previously presented) The rotary die according to claim 12, wherein said plurality of die components further include:

(a) four score die components that determine the length of a carton to be erected from the corrugated carton blank;

(b) four crease die components that determine the height of the carton; and

(c) two flap die components that determine the width of the carton and cut the slots for the flaps.

14. (previously presented) The rotary die according to claim 12, wherein said plurality of die components further include:

(a) two score/crease panel die components which determine the height and the length of a carton to be erected from the corrugated carton blank;

(b) one crease die component that determines the height of the carton; and

(c) two flap die components that determine the width of the carton and cut the slots for the flaps.

15. (previously presented) The rotary die according to claim 12, wherein each of said closure panel die components further includes a curved cut blade that cuts the outline of a hide away handle on a fold in panel of a quick closing closure panel formed on the corrugated carton blank.

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (original) The rotary die according to claim 1, wherein said plurality of die components cooperate to form a corrugated carton blank having one quick closing continuous closure panel that runs along the length of the carton blank on one side thereof, which carton blank can be erected to form a telescope half carton.

21. (previously presented) The rotary die according to claim 20, wherein said plurality of die components further include:

(a) two score/crease die components that determine the height and the length of the carton to be erected from the corrugated carton blank; and  
(b) one crease die component that determines the height of the carton.

22. (canceled)

23. (canceled)

24. (original) The rotary die according to claim 1, wherein said plurality of die components are pre-assembled in interlocking relation with one another on a brace for positioning the pre-assembled die components on a roller of a rotary die cutter.

25. (original) The rotary die according to claim 1, wherein said plurality of die components are secured in position on a roller of a rotary die cutter.

26. (previously presented) A rotary die cutter for making a corrugated carton blank, from which a carton having at least one quick closing continuous closure panel can be erected, from a stock sheet of corrugated material, comprising:

a rotary die anvil roller;

a rotary die roller;

a rotary die mounted on the outer circumferential surface of the rotary die roller to form a rotary press with said rotary die anvil roller for producing a corrugated carton blank from a stock sheet of corrugated material fed between the rotary die and the anvil roller;

wherein the rotary die is formed with a plurality of at least five interlocking modular die components which are capable of being combined in

multiple configurations for producing multiple carton sizes, said die components being mounted directly on said rotary die roller and interlocked with one another, each die component having at least one blade thereon for at least one of scoring, creasing and cutting a corrugated sheet fed between the rotary die and the anvil roller to cooperatively form a corrugated carton blank from a stock sheet of corrugated material,

wherein said plurality of die components include, with reference to the three dimensions of a carton to be erected from a corrugated carton blank, at least one length die component which determines the length of the carton, at least one height die component which determines the height of the carton, and at least two closure panel die components which determine the width of the carton and produce respective fold-in panels of said at least one quick closing continuous closure panel,

wherein each of said closure panel die components includes:

two slit/cut blades each arranged for slitting a 45 degree angled line on a fold-in panel of a quick closing continuous closure panel,

two perforation blades each arranged to cut and score the corrugated stock sheet to form a perforated straight line that is perpendicular to the length of the carton blank, and

one scoring blade arranged to score a straight line at the bottom of the fold-in panel, parallel to the length of the carton blank and between the two perforated lines formed by said two perforation blades.

27. (previously presented) The rotary die cutter according to claim 26, wherein said at least one quick closing continuous closure panel formed by said die components runs end-to-end along the length of the carton blank.

28. (canceled)

29. (previously presented) The rotary die cutter according to claim 26, wherein the at least two closure panel die components each have a curved cut blade that cuts the outline of a hide away handle on fold-in panels formed on the carton blank.

30. - 39. (canceled)